Amendments to the Claims

1.– 23. (Cancelled)

24. (New) A protection system for first and second interconnected communication networks, each network having a primary terminal configured to communicatively interconnect the networks over a primary communication circuit, the system comprising:

a first node associated with the primary terminal in the first network, and configured to establish a secondary communication circuit with the primary terminal in the second network responsive to a failure of the primary terminal in the first network; and

a second node associated with the primary terminal in the second network, the second node configured to establish a secondary communication circuit with the primary terminal in the first network responsive to a failure of the primary terminal in the second network.

25. (New) The system of claim 24 wherein at least one of the first and second networks comprises an automatic control plane (ACP), and wherein the other of the first and second networks is protected by one of an automatic switching mechanism and a control plane mechanism.

26. (New) The system of claim 24 wherein the primary terminal and the first node in the first network comprise source nodes, and wherein the primary terminal and the second node in the second network comprise destination nodes.

27. (New) The system of claim 24 wherein the primary terminal and the first node in the first network comprise destination nodes, and wherein the primary terminal and the second node in the second network comprise source nodes.

28. (New) The system of claim 24 wherein, during normal operation, the primary terminals in the first and second networks communicate over the primary communication circuit and use an on-the-fly circuit restoration mechanism.

29. (New) The system of claim 28 wherein the primary terminal in the first network comprises a primary origin node, and wherein the primary terminal in the second network comprises a primary destination node.

30. (New) The system of claim 29 wherein the primary origin node comprises a controller node, and wherein the primary destination node comprises a cooperator node.

31. (New) The system of claim 30 wherein the primary destination node is configured to detect a failure of the primary origin node responsive to detecting a failed synchronization attempt with the primary origin node.

32. (New) The system of claim 31 wherein the primary destination node is further configured to establish the secondary communication circuit with the first node in the first network responsive to detecting the failed synchronization attempt with the primary destination node.

33. (New) The system of claim 30 wherein the primary origin node is configured to detect a failure of the of the primary destination node responsive to detecting a failed synchronization attempt with the primary destination node.

34. (New) The system of claim 33 wherein the primary origin node is further configured to establish the secondary communication circuit with the second node in the second network responsive to detecting the failed synchronization attempt with the primary destination node.

35. (New) The system of claim 27 wherein the primary origin node comprises a controller node configured to calculate a circuit routing to the second node, and signal the second node to establish the secondary communication circuit.

36. (New) The system of claim 24 wherein each of the first and second nodes is configured to detect a failure of its associated primary terminal using a heartbeat protocol communicated with its associated primary terminal.

37. (New) The system of claim 36 wherein at least one of the first and second nodes is configured to establish a reset circuit with the other of the first and second nodes responsive to a failure of both the primary terminals.

38. (New) The system of claim 24 wherein the first and second networks are interconnected by a transport network having an Automatic Switched Transport Network (ASTN) control plane, and wherein the primary terminals and the first and second nodes are connected by the transport network.

39. (New) The system of claim 38 wherein at least one of the first and second networks comprises a network based on a TMN ITU-T M. 3010 management architecture.

40. (New) The system of claim 38 wherein at least one of the first and second networks comprises a MS-SPRing network.

41. (New) The system of claim 40 wherein the first network comprises the MS-SPRing network, and wherein path information for the MS-SPRing network is configured according to one or more protection diagrams that indicate a communication path between the primary terminal in the MS-SPRing network and the first node.

42. (New) The system of claim 41 wherein the MS-SPRing network is configured to switch client traffic to the first node responsive to a failure of the primary terminal MS-SPRing network.

43. (New) The system of claim 42 wherein the primary terminal in the second network is configured to send a first restoration message to the primary terminal in the MS-SPRing network to the start an on-the-fly ASTN restoration scheme.

44. (New) The system of claim 43 wherein, if the primary terminal in the MS-SPRing network fails to answer the first restoration message, the primary terminal in the second network is configured to send a second restoration message to the first node to the start the on-the-fly ASTN restoration scheme.

45. (New) The system of claim 38 wherein at least one of the first and second networks comprises a SNCP network.

46. (New) The system of claim 45 wherein the first network comprises a virtual ring SNCP network.

47. (New) The system of claim 46 wherein if the primary terminal in the virtual ring SNCP network detects a failure at a client input, the primary terminal in the virtual ring SNCP network is configured to indicate the failure to the first node.

48. (New) The system of claim 47 wherein the primary terminal in the second network begins an ASTN traffic restoration procedure to the second node responsive to detecting the failure of the primary terminal in the virtual ring SNCP network.

49. (New) The system of claim 47 wherein the primary terminal in the virtual ring SNCP network is configured to begin an on-the-fly restoration procedure responsive to a failure at the primary terminal in the second network.

50. (New) The system of claim 47 wherein the primary terminal in the second network is configured to begin an on-the-fly restoration procedure responsive to a failure at the primary terminal in the virtual ring SNCP network.

51. (New) The system of claim 38 wherein the first network comprises an SNCP network having a dual ring interconnection protection scheme.

52. (New) The system of claim 51 wherein if both of the primary terminals detect a failure, the primary terminal in the SNCP network indicates the failure to the first node, and switches an ASTN protection group to the first node to establish the second communication circuit.

53. (New) The system of claim 51 wherein if both of the primary terminals detect a failure, the primary terminal in the second network indicates the failure to the second node, and switches an ASTN protection group to the first node to establish the second communication circuit.

54. (New) The system of claim 51 wherein the first node is configured to detect a failure of the primary terminal in the in the SNCP network, and control an ASTN protection group to restore a connection with the primary terminal in the second network.

55. (New) The system of claim 51 wherein the first node is configured to detect a failure of the primary terminal in the in the SNCP network, and control an ASTN protection group to restore a connection with the second node.

56. (New) The system of claim 51 wherein an ASTN protection group switches to the first node in the SNCP network to establish a communication circuit between the first and second nodes.

57. (New) The system of claim 51 wherein an ASTN protection group switches to the second node in the second network to establish a communication circuit between the first and second nodes.